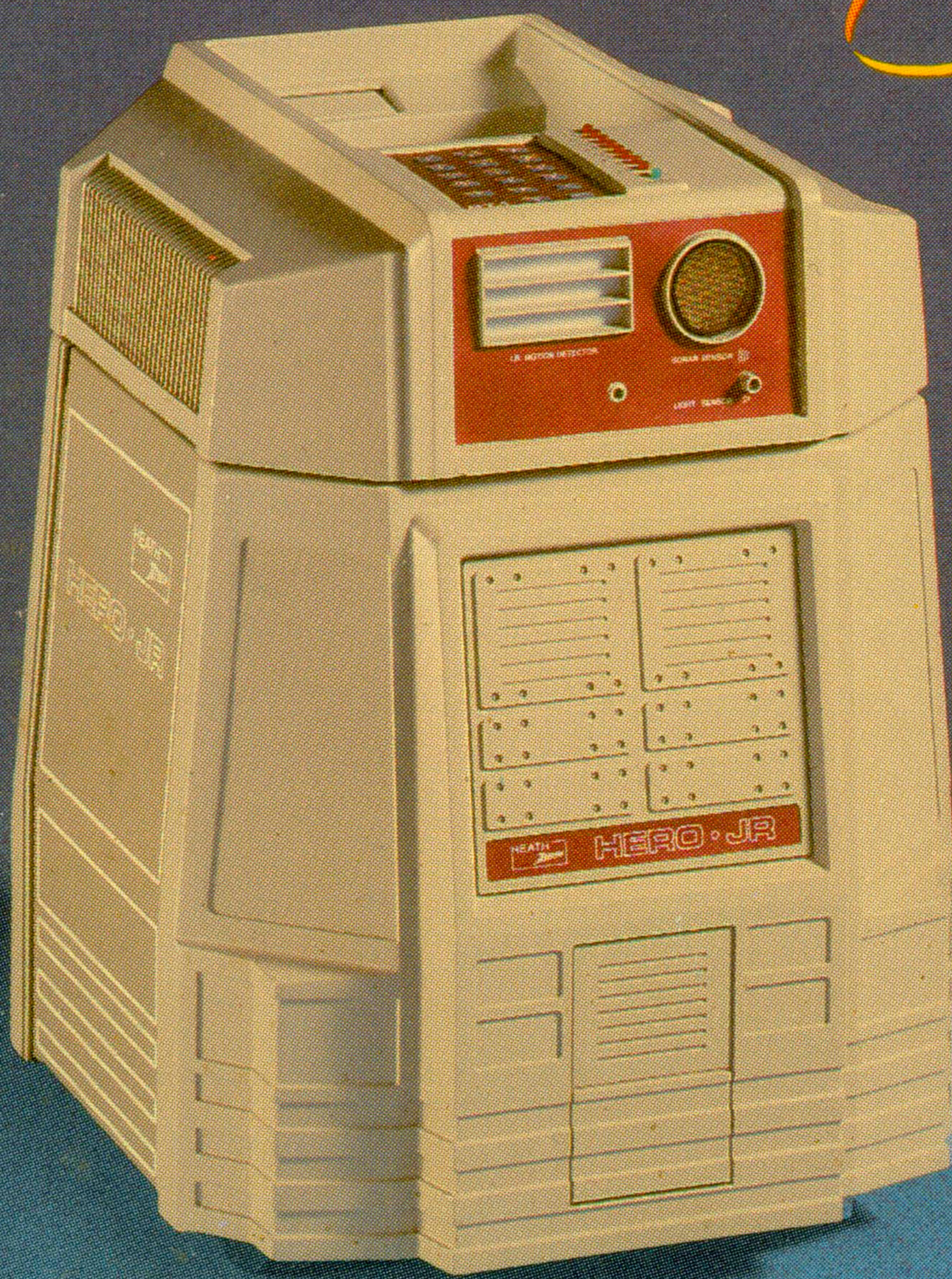


HERO-JR

OWNER'S GUIDE



HEATH
ZENITH

HERO Jr®

Owner's Guide

Model RTW-1 & RT-1

HEATH COMPANY
BENTON HARBOR, MICHIGAN 49022

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INTRODUCTION

Congratulations! You have just stepped into the future, a world of exploring, talking, thinking, responding robots. HERO Jr is the worlds first robot, like R2D2 of “Star Wars” fame, that has its own personality.

HERO Jr is more like a household pet than just a mechanical device. It will use its light sensor, sound sensor, infrared motion detector, and on-board computer control system to almost make a life of its own. And its personality is yours to shape and mold as you see fit. It might try to follow you around, or gab, or sing, or recite poetry, or just wander about and go exploring on its own.

To say that you can shape its personality means that you can make it more of a poet than an explorer, or more of a gabby companion than a singer, etc. You can individually make each one of its six personality traits (Speak, Sing, Play, Explore, Gab, and Poet) more or less dominant.

HERO Jr has another human characteristic too — when it's not doing anything else it goes to sleep. In the sleep state, it conserves battery power by turning off all but a few critical circuits.

But HERO Jr isn't just an interesting companion. Like any well trained pet, it can also perform some very useful functions. For example, it can act as a guard to keep your home or work area safe from intruders. You can even program it, if you have the accessory Model GDA-2800-3 Transmitter installed, to set off the Heath security system Its Alarm mode lets you use it to wake you up in the morning; and its Plan mode lets you program it to perform some specific tasks at future times, such as reminding you of a child's birthday, an anniversary, or other regular event.

This Owner's Guide will help you get the most possible use out of your Robot, whether you are just a beginner or an experienced user. First, let us assure you that you cannot in any way harm the Robot by pressing an incorrect key on the keyboard. In some cases, the Robot will even tell you that you have made an "illegal entry." The most you will ever have to do to correct an error is to simply push the RESET key.

If this is your first attempt at operating the Robot, we suggest that you read through and then perform the steps in each section in order. This will help you learn the most about your Robot and help prevent any possible confusion.

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CHARGING THE BATTERIES

Be sure that you fully charge the batteries before using your Robot for the first time. You should also charge the batteries if you have not used the Robot for some time, or if the Robot says “low voltage” during operation. Charge the batteries for 12 to 14 hours to ensure a full charge (from a discharged condition). You cannot overcharge the batteries or harm them by leaving the charger connected for an extended period of time. The Robot will operate but will not explore on its own while the charger is connected to the CHARGER socket.

The Robot will normally operate for at least four hours on a full charge. This time varies greatly, depending upon how active the drive and steering motors are. The Model RTA-1-4 Battery Accessory can double the operating time.

CHARGING PROCEDURE

1. Connect the free end of the power cord to the CHARGER socket on the rear of the Robot's head.
2. Plug the power cube into a standard 120-volt AC household outlet.

3. Push the SLEEP-NORM switch on the Robot's head to SLEEP and press the RESET key on the keyboard. NOTE: It is not necessary to push the POWER switch to OFF during charging (if you have already been using the Robot and you push the POWER switch to OFF, you will have to repeat the start-up procedure).

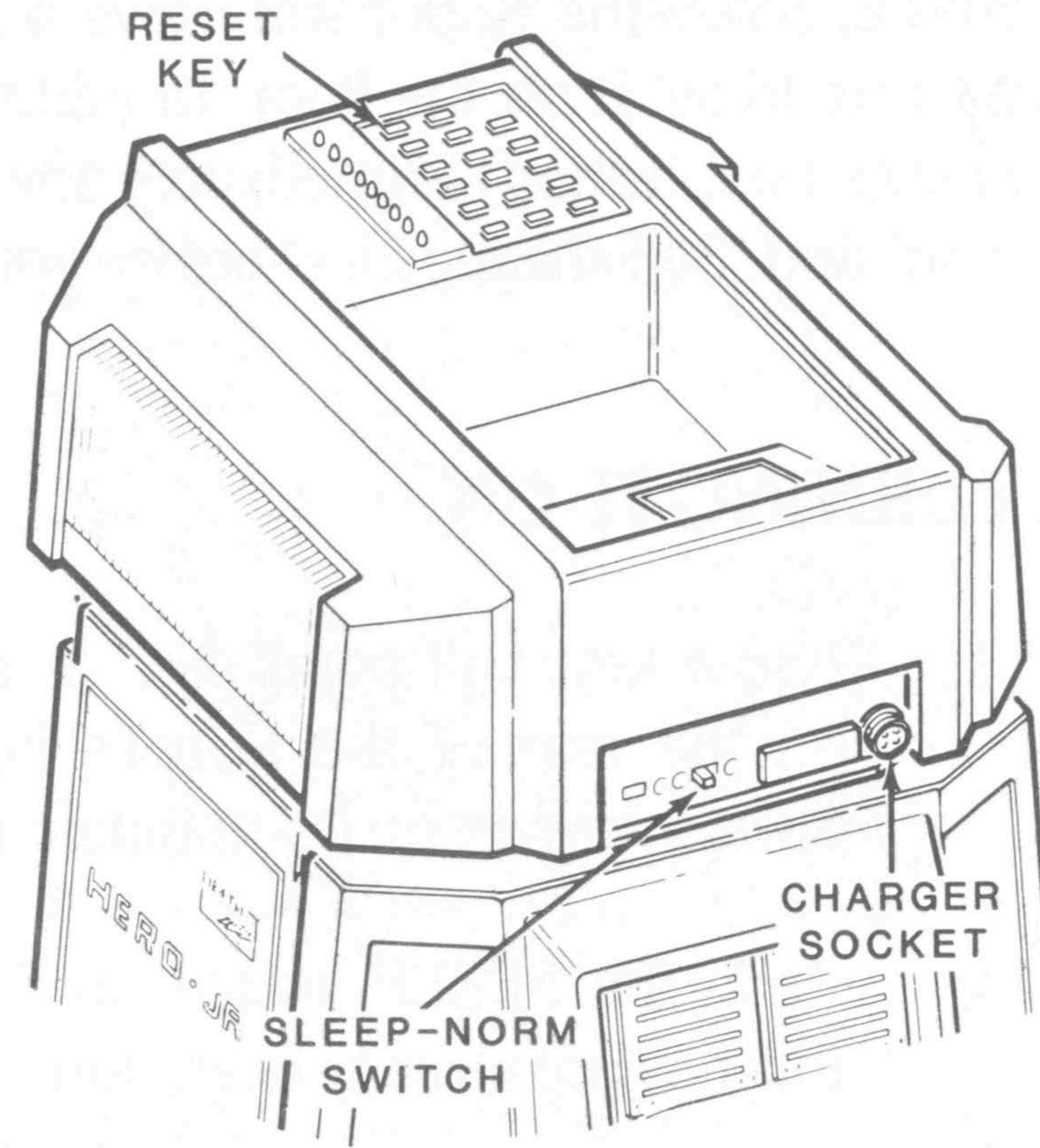


Figure 1

NOTE: Whenever the power cube is not plugged into an outlet, be sure to disconnect the power cord from the Robot, or the power cube will eventually discharge the batteries.

START-UP PROCEDURE

NOTE: Since the Robot will move a few inches during the start-up procedure, be sure to set it on the floor. In addition, since the Robot will start its self-diagnostics (self-testing) immediately after you turn it on, completely read "Turning it on" and "Self-diagnostics" before you begin.

TURNING IT ON

1. Use a key, ball-point pen, or similar object to push the POWER switch on the rear of the Robot's head to ON. Normally, this switch should always remain on (to maintain the Robot's memory and the time).
2. Push the SLEEP switch on the rear of the Robot's head to NORM, if this has not already been done.
3. Push the RESET key on the keyboard. The green POWER LED will light. The red DATA LEDs (indicator lights) will also flicker as the Robot speaks.

SELF-DIAGNOSTICS

After you turn the Robot on, it will perform the self-diagnostic tests. You will have to participate in some of these tests, most of which are self-explanatory and require you to simply wave your hand in front of one of the sensors. These sensors are clearly labeled on the front and side of the Robot's head. Just follow the directions provided by the Robot. If your Robot does not have the optional infrared motion detector, it will say "motion detector malfunction" for this test. This is normal, and your Robot will use the sonar transducer when it is running a program that requires the motion detector.

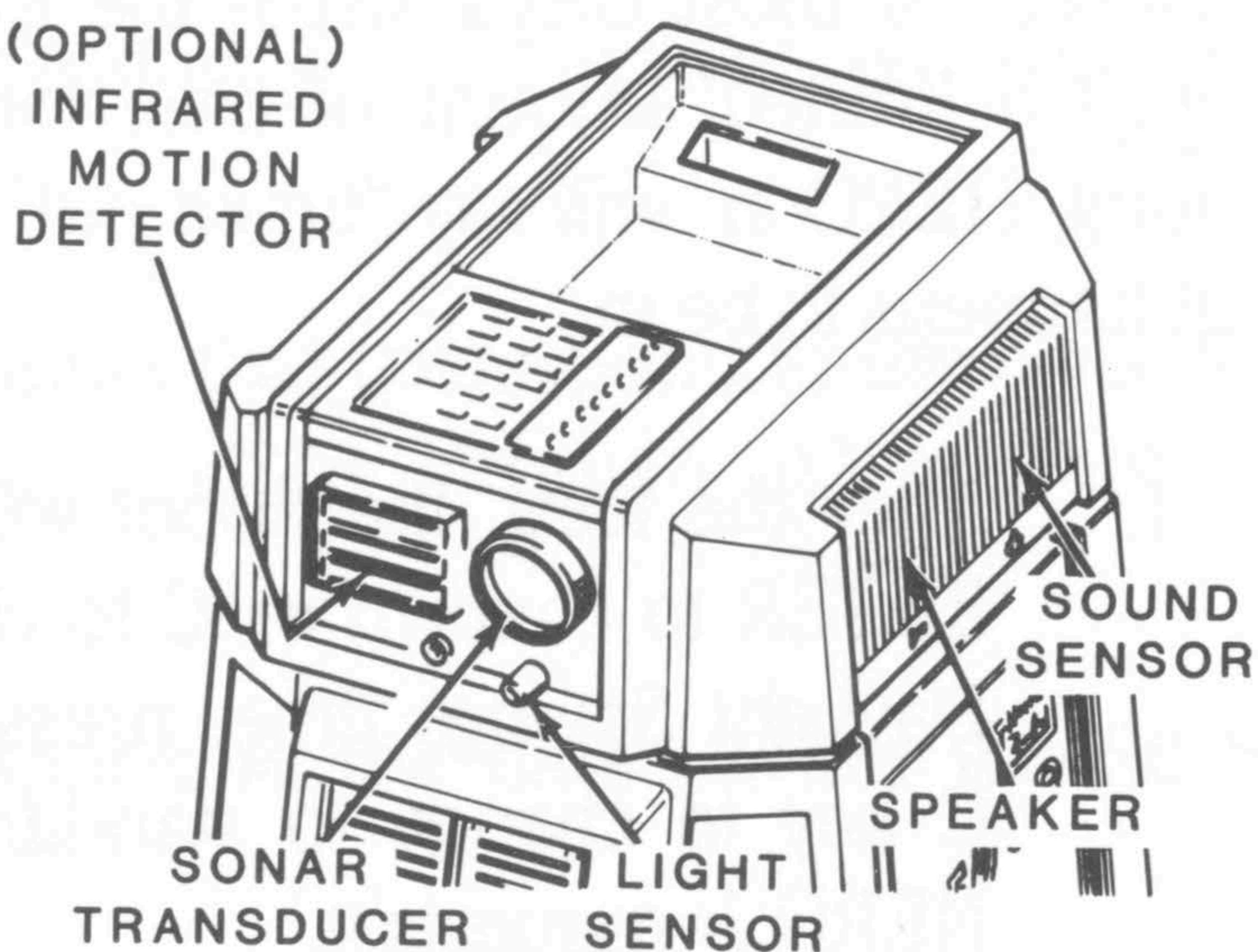


Figure 2

SETTING THE CLOCK

NOTE: In most cases, when the Robot asks you to do something, it will only wait a limited amount of time for you to respond. If you make it wait too long, HERO Jr. will say “timed out” and will continue on with whatever routine it happens to be in.

1. After the tests, the Robot will say “daylight savings time selected. Press ENTER to confirm or C to change.” If you live in an area that observes Daylight Savings time, press the ENTER key. If you do not, press the C key to change to standard time; then press the ENTER key when HERO Jr requests it.

NOTE: In the following steps, you will set the time and date. Do not be concerned if you notice that you have made a mistake while performing these steps. You will be given a chance to correct any errors later.

The Robot will now say:

2. “Enter day.” Press the key that corresponds to the correct day code. For example: 1 = Sunday, 2 = Monday, 3 = Tuesday, etc. (up to 7 = Saturday).
3. “Enter date, month.” Enter the **two digits** that correspond to the correct month code. For example: 01 = January, 02 = February, 03 = March, etc. (Up to 12 = December).
4. “Date.” Enter **two digits** that correspond to the date (05 for the 5th, 12 for the 12th, etc.).
5. “Year.” Enter **two digits** that correspond to the year (84 for 1984, etc.).
6. “Enter time...hours” (1 through 12). Enter **two digits** (01 for 1 o'clock, 11 for 11 o'clock, etc.). HERO Jr will ask whether it's AM or PM later.

NOTE: The clock inside the Robot will not start keeping time until you press the ENTER key in a later step. Set the minutes about one minute fast in

the next step. This will allow you time to perform the remaining start-up steps before you press the ENTER key.

7. “Minutes.” Enter **two digits** (06, 45, etc.).
8. “Press A for AM; press E (evening) for PM.” Press the proper key for the time of day.
9. The Robot will now speak the time and date that you entered. If they are correct, wait until the actual time agrees with the minutes you entered in step 7 above; then press the ENTER key. If you wish to change the time and/or date, press the C key and return to step 2 of these instructions.

The Robot will now say:

10. “Set special date.” Decide upon a date that you wish to have the Robot remember (such as a birthday, anniversary, etc.).

11. “Enter date, month.” Enter the **two digits** that correspond to your special month.
12. “Date.” Enter the **two digits** that correspond to your special date.
13. “Year.” Enter the **two digits** that correspond to your special year. NOTE: If your special date occurs every year, press the ENTER key instead of a year. (The Robot will say “Don’t care.”) You will learn more about this later when you read about the Plan feature on Page 29.

NOTE: When you press the ENTER key, in the next step, your Robot will respond with an introductory message followed by the word “ready.” If you do not enter any commands for several seconds, the Robot will say “timed out” and will automatically start operating on its own, using its built-in personality. The Robot will seem to have a mind of its own and may sing, speak, recite poetry, etc. (See “The Robots Features” on Page 17 and “Understanding the Personality” on Page 24.)

14. The Robot will now speak your special date. If the date is correct, press the ENTER key. If you wish to change the date, press the C key and

return to step 10 of these instructions . . . when that special date occurs, HERO Jr will say “It’s a special day today” at random times during the day.

NOTE: If this is the first time you have turned your Robot on, perform the following step. This will set all of the personality traits to zero so that you will not be confused when you learn about HERO Jr’s other features. You will learn more about the Robot’s personality later.

15. Press the SET UP key. The Robot will tell you how its personality is currently set up and give you the chance to change its personality traits. As the Robot calls out each of the six traits (such as “Sing”), press the zero key. If you press a key other than zero, wait until you have all of the traits set. Then simply repeat this step.

NOTE: When the Robot is waiting for you to do something, the LEDs will strobe away from you (as you face the front of the Robot). When the Robot is acting on its own or speaking, the LEDs will flash randomly or in time with the speech.

REMOTE CONTROL ACCESSORY

The Remote Control Accessory (standard on some models) allows you to manually move the Robot from one place to another. You can use the Remote Control as soon as you complete the "Start-Up Procedure," or while the Robot is under the control of another program.

Key 1 — Steers the Robot to the left. Hold this key down as necessary to make the required turn. Release this key to return the steering to straight ahead. Or you may find it easier to make HERO Jr make a normal turn if you press the key several times in a row. Your skill will improve rapidly as you use the Robot.

Key 2 — Causes the Robot to move forward, stop, and move backwards. The first time you press this key (press the key and hold it down momentarily), the Robot will move forward. Press this key again (and hold it down momentarily) to stop the motion. The third time you press this key the Robot will move backwards and a fourth press will again stop the motion. If you press the key again, the Robot will again move forward, etc.

Key 3 — Steers the Robot to the right.

Key 4 — Returns Manual Control to the Robot and allows the explore personality trait to become active again (allows the Robot to move about on its own).

NOTES:

1. The Robot accepts control from both the keyboard and the Remote unit. When you press a key on the keyboard while you are using the Remote Control, the keyboard entry will override the Remote Control.
2. If the Robot is moving under its own control and you operate the Remote Control, the Remote Control will override the Robot's own commands.
3. When the Robot is operating under remote control, the data LEDs (indicator lights) will strobe toward you (7 to 0), unless the Robot is speaking.

THE ROBOT'S FEATURES

It is HERO Jr's unique personality that gives your Robot a mind of its own and causes it to act more like a pet or a small child than a robot. It might play, or sing, or speak, or recite poetry, or just gab, or even go exploring.

There are also several other ways you can use your Robot, which are listed below and explained on the following pages. But HERO Jr will automatically revert back to it's built-in personality when you are not using it for one of these other tasks.

- The PLAN key allows you to program HERO Jr to perform tasks at some specific time in the future.
- The GUARD key lets you program HERO Jr to guard your home or office to keep it safe from intruders.
- The ALARM key, allows you to program your Robot to wake itself up at a certain time, or to wake you up at a particular time, or to inform you vocally at some time in the future that "It's time for something special."

- The SET UP key lets you modify the Robot's personality.
- Manual Entry from the keyboard lets you assign a specific task to HERO Jr. You can make it Speak, Sing, Play, Gab, or recite poetry, or turn on its Demo program.
- The SLEEP switch turns off all but a few of HERO Jr's critical circuits to conserve power. Use this switch in the SLEEP position instead of turning the Robot's power off.

MANUAL ENTRY

By using HERO Jr's keypad, you can select one of the programs that are permanently stored in the Robot's memory. This includes the Demo program, and Speak, Sing, Play, Gab, and Poet.

Speak, Sing, Play, and Poet each have word selections that are permanently stored inside the Robot's memory. The following steps show you how to use

the Speak feature. You can then use the same method to experiment with the other four, which work the same way.

Use the following procedure to turn on the Speak feature:

1. Press the SPEAK key. The Robot will ask you to enter a 2-digit number.
2. Press the 0 and 1 keys to obtain selection 1. The Robot will speak the time and date and wait for your next command.

Now that you know how this mode works, try to enter different selection numbers in the Speak feature. Also use the same method to experiment with Sing, Play, and Poet. If you select the Gab feature, HERO Jr will speak random gibberish that sounds like English. Normally, you would use keys 0 through 3 for the activity level of Gab.

GUARD

Your Robot makes a very good security device. Unlike many security devices, you can even leave HERO Jr on while you are home. If you should happen to be detected by one of the Robot's sensors, it will simply ask you for a password. When you provide the proper response (the password is from one to eight handclaps), the Robot will take no further action. If you fail to give the proper response, you could have the Robot programmed to automatically set off a home security alarm (such as the Heathkit Model GD-2800 series Security System), which may be equipped to call a neighbor. This assumes that you have the Model GDA-2800-3 Transmitter (part of the GD-2800 system) installed in your Robot.

If you have the Model RTA-1-1 Infrared (IR) Motion Detector installed in your Robot, it will use this sensor to look only for heat sources that are moving (such as humans or pets). If you do not have the IR Motion Detector, the Robot uses its sonar to look for a change in range (which indicates movement).

Guard Modes

When you activate either of the guard modes, HERO Jr will ask you to enter the password. Wait until the LEDs go out, and then clap your hands any number of times between once and eight. Watch another LED light each time you clap to confirm that the clap was recognized. This number of claps becomes the correct password.

1. In the first mode, the Robot remains stationary and guards a specific area. When one of the sensors detects movement, the Robot will ask for a password. A correct password cancels the alarm and no further action occurs. An incorrect password, however, causes the Robot to give a verbal warning message and set off your home security system, if your Robot is equipped to do so.

NOTE: When you give the correct password, it will cancel the guard mode. (Press the GUARD key again if you want to reactivate the guard mode.) Press RESET to cancel the alarm in all other cases.

2. The second mode works similar to the first, except it combines the Robot's detection circuits with its ability to move about. NOTE: Be sure you read the "Caution" on Page 27 about things to watch out for when the Robot is moving about.

Activating the Guard Feature

1. Press the GUARD key.
2. When the Robot asks for you to enter 1 or 2, press the key that corresponds to the mode of security you desire, as described above.

ALARM

The Alarm key allows you to program the Robot to perform one of three alarm modes.

The Three Alarm Modes

1. The first mode puts the Robot to sleep and then wakes it up again at the specified time. When it wakes up, its personality is turned on.
2. The second mode acts more like an alarm clock by allowing you to program the Robot to wake you up at a particular time. The Robot will make two vocal attempts to wake you up and even ask you if you are awake. If you do not answer the Robot, it will wait ten minutes and make a third attempt to awaken you. If this attempt fails, it assumes you have already left and will go to sleep until the next day to conserve battery power.
3. Mode three is a special alarm feature. This mode allows you to preprogram the Robot to inform you vocally at some time in the future that something is supposed to happen. It will continue to make this announcement for one minute, or until you press the RESET key. This mode is usually used within the Plan function (see Page 30) for anniversaries and birthdays.

Activating the Alarm Feature

1. Press the ALARM key.
2. When the Robot asks you to enter 1, 2, or 3, press the key that corresponds to the alarm mode you desire.
3. When the Robot asks for the time, enter the time that you wish to have the Robot wake up. After you have entered the time, the Robot will go to sleep. The Plan feature, described later, will show you how to make the Robot stay awake and yet perform the alarm function at a later time.

NOTE: To awaken the Robot from self-initiated sleep, you must press the RESET key. This action also cancels the Alarm feature.

UNDERSTANDING THE PERSONALITY

Personality is one of the more fascinating features of your Robot and allows it to act more like a pet than a robot. You can actually program your Robot to have its own unique personality.

You have already learned about the Sing, Speak, Play, Gab, and Poet personality traits. Personality uses these traits in addition to an Explore trait to provide the Robot with with a personality of its own.

LEVELS OF ACTIVITY AND THE SELECTION PROCESS

Each personality trait has eleven levels of activity, which are designated by the numbers 0 through 9 and the letter A (which means “always”). When you first turned your Robot on, these levels were automatically set as follows and are referred to as the “default levels”:

<u>TRAIT</u>	<u>LEVEL</u>
Sing	1
Speak	2
Poet	1
Play	1
Explore	1
Gab	0

During the Start-up Procedure, if it was the first time you turned your Robot on, you were instructed to set these six levels to zero. Since the Robot automatically goes to its personality when it is not performing some other command, you were instructed to set these levels to zero so they would not confuse you while you were learning how some of the other features operate.

When you have the personality traits set to the desired levels (as above, for example, or to the other levels you prefer), it will perform these personality traits in a random fashion. The lower you have a particular level set, the less likely the Robot is to perform that personality trait. For example, if you set the Explore trait to a high value, such as 9, and the Sing trait to a low value, such as 1, the Robot is much more likely to explore than it is to sing.

Try to think of the levels as divisions on a dart board. The higher you have the level set, the larger that particular division is on the dart board. Conversely, the lower the level, the smaller that division is. As you can see, when you throw darts at the board, you are much more likely to hit one of the larger areas than you are to hit a small area. This is very similar to the way the Robot decides which personality trait to exhibit.

EXPLORE

Before you actually set the levels to some desired value, you should know more about the Explore trait. When the Robot explores, it will move about on its own and actually explore the area. All of its sensors are combined to help reduce the chances of its running into a wall or some other object.

CAUTION — Supervise your Robot – until you become familiar with the Explore Trait. You may decide to protect or move furniture. You will also want to protect HERO Jr from itself:

- Don't let it "explore down a stairway." There are no internal controls to keep this from happening.

- Keep it safe from heat sources. When it is using its heat and light sensors to explore, it could mistake a burning fireplace or a wood stove for a human being.

SETTING THE PERSONALITY

Use the following procedure to change the Robot's Personality:

1. Push the SET UP key. The Robot will tell you how the various personality traits are currently set.
2. After the Robot tells you how the levels are set, it will give you the opportunity to change each level. If you have not set these levels before, except during the Start-up Procedure, set the levels to the values listed on Page 11. Simply press the proper number key as the Robot prompts you. NOTE: If you want to know what the personality levels are but don't want to change them, press ENTER.

The Robot will now exhibit a personality based upon the levels you set. Let the Robot operate on its own for several minutes and observe how unpredictably it acts...more like a pet or a child than a Robot. Since the selection process is very random, it may occasionally even select the same task twice in a row.

You can still use one of the manual entry keys described earlier to force the Robot to sing a particular song or speak a particular phrase; but as soon as it finishes it will wait for your next command for about 15 seconds, say "timed out," and then automatically return to its Personality.

To temporarily inhibit the Personality mode, press any key except ENTER.

To inhibit the Personality mode for a longer period of time, you can either slide the NORM-SLEEP switch on the back of the head to SLEEP or you can reset all of the personality levels to zero.

Now that you understand how HERO Jr's Personality operates, you can reset the traits to whatever levels you desire.

PLAN

The PLAN key allows you to program the Robot to perform a specific task or tasks at a future time. You can enter up to about 16 different plans into memory, but this total number depends on the size of each plan. Since each command you enter reduces the amount of available memory, the total number of commands you can use is limited. If you enter several large plans, the total number of possible plans becomes less than 16.

Since this mode is somewhat more complicated than the other modes, detailed instructions are provided below that show you how to enter two example plans. You should then be able to use the information provided here to design your own plans.

NOTE: If you wait too long between entries, the Robot will time-out and revert back to its personality. The plan that you were entering will not be saved in memory and you will have to start the plan over.

Example 1:

Assume that it is now 8:00 PM and you want to design a plan that will cause the Robot to wake you up at 6 AM tomorrow; but you also want it to stay awake until 11:00 PM tonight. (You can't use the Alarm feature to do this, since the Robot goes to sleep as soon as you enable that feature.)

Use the following procedure to properly enter this plan:

1. Press the PLAN key. The Robot will respond with “Begin plan.”
2. When the Robot asks you for the time and date, enter the time and date that you wish to have the plan begin. NOTE: In this example, this time is 11:00 PM tonight (the time the Robot will go to sleep).
3. Listen for the Robot to say “next,” which means it is waiting for the next (or first) instruction (you will tell it what to do at the plan time you just entered; in this case you will press the ALARM key).
4. Press the ALARM key to enter the Alarm mode.

5. When the Robot asks you to enter 1, 2, or 3, press the 2 key for alarm mode 2. NOTE: Refer back to the Alarm section of this Guide for more information about these functions.
6. When the Robot asks you for the time, enter the time that you wish to have the alarm go off, 6:00 AM in this example.
7. The Robot will say “next” again. Since you are not giving it any further tasks to do, press the PLAN key to exit the Plan mode.

You now have Example 1 entered into memory. The Robot will now remain active, go to sleep at the time you have designated for the plan to begin (11:00 PM), and wake you up at the proper time.

NOTE: When a plan includes an alarm, perform the alarm last, since all the alarm modes return to the Robot Personality (and additional tasks in the plan after the alarm will not be done).

Example 2:

Assume that you want to have the Robot say the time every day at 7:00 PM, sing at 7:15 PM, say “I am HERO junior” at 7:30 PM, and recite poetry at 7:45 PM. Since you are requesting something to happen at four different times, you will have to design four separate plans.

Use the following procedure to properly enter the four plans that will satisfy this example:

1. Press the PLAN key.

2. When the Robot asks you to enter the time and date, enter the following:

Month	ENTER (for don't care*)
Date	ENTER (for don't care*)
Year	ENTER (for don't care*)
Hours	07
Minutes	00
AM or PM	E (for evening)

3. When you have the time and date entered correctly, press the ENTER key as requested.

4. When the Robot says “next,” press the SPEAK key. Then enter 01 for the selection that speaks the current time.

* When you press the ENTER key instead of entering an actual date, you are telling the Robot that you “don’t care to be specific here;” you want this to happen on **all** of the months (or days, or years). You could also use this key instead of entering one of the time elements. If you press ENTER instead of entering a specific hour, for example, the Robot will perform the operation every hour.

5. Press the PLAN key to exit the Plan mode. This ends the first plan.
6. Press the PLAN key to enter the Plan mode. This begins the second plan.
7. Use the same procedure as you did in steps 2 and 3 above to enter the following time and date:

Month	ENTER
Date	ENTER
Year	ENTER
Hours	07
Minutes	15
AM or PM	E

8. When the Robot says “next,” press the SING key. Then enter a number that corresponds to one of the sing selections (such as 02).
9. Press the PLAN key to exit the Plan mode. This ends the second plan.

10. Press the PLAN key to enter the Plan mode. This begins the third plan.
11. Enter the following time and date:

Month	ENTER (for don't care)
Date	ENTER (for don't care)
Year	ENTER (for don't care)
Hours	07
Minutes	30
AM or PM	E
12. When the Robot says "next," press the SPEAK key. Then enter 04 for the selection "I am HERO Junior, your personal Robot."
13. Press the PLAN key to exit the Plan mode. This ends the third plan.
14. Press the PLAN key to enter the Plan mode. This begins the fourth plan.

15. Enter the following time and date:

Month	ENTER (for don't care)
Date	ENTER (for don't care)
Year	ENTER (for don't care)
Hours	07
Minutes	45
AM or PM	E

16. When the Robot says "next," press the POET key. Then enter a number that corresponds to one of the poet selections (such as 02).

17. Press the PLAN key to exit the Plan mode. This ends the fourth plan.

You now have Example 2 entered into memory. The Robot will remain active, but will perform each of the programmed tasks at the proper time.

SLEEP

As we mentioned earlier in this Guide, the Robot goes to sleep whenever you activate the Alarm feature. It will also go to sleep at times even while it is performing many of the other operations. The green LED will flash once every five seconds while it is sleeping.

The purpose of Sleep is to allow the Robot to conserve battery power by turning off all except some critical circuits, or those circuits needed to do a particular operation. You can also force the Robot to go to sleep at any time by sliding the NORM-SLEEP switch on the back of its head to SLEEP. As we mentioned earlier, you should always slide this switch to the SLEEP position whenever you charge the batteries.

Push the NORM-SLEEP switch to NORM if you want to wake the Robot up; usually, it will say something upon awakening. If you want to wake it up from a brief sleep while it is in its Personality mode (some red LEDs will be on, but not strobing), push the RESET key.

ABOUT THE HELP KEY

The Help key gives you reference information about the other trait and mode keys (such as Sing, Speak, Alarm, etc.). To obtain information about the Guard key, for example:

1. Press the HELP key.
2. When the Robot asks you to press one of the other keys, press the GUARD key. The Robot will provide you with information about that key.

You can use the same procedure to obtain quick information about any of the other function keys.

ROBOT WIZARD

Once you have become familiar with the operation of HERO Jr, **you** may to advance **your** skills. Refer to the “Programmer’s Guide” for secret passwords for this function.

DEMO PROGRAM

The Demo Program allows the Robot to demonstrate many of its features. Some interaction on your part is required, but the Robot will tell you what to do and when. CAUTION: The Robot will move around some during this program.

To begin the Demo Program, simply press the DEMO key. Now follow the directions provided by the Robot.

IMPORTANT: At one point in the program the Robot will ask you to identify yourself. When this happens, clap your hands three times.

VOICE ADJUSTMENTS

You can tailor the Robot's voice to whatever sounds best to you with the volume and pitch adjustments, which are located on the CPU circuit board inside the Robot's head. You can use a small-blade screwdriver or the tool provided with your Robot to adjust them without removing the head.

To change the volume, pass a screwdriver blade through the indicated space between the head and the right side panel. Then use the screwdriver to turn VOLUME control R234 clockwise to increase the volume or counterclockwise to decrease the volume.

To change the pitch, pass the screwdriver blade through the indicated space between the head and the right side panel. Then use the screwdriver to turn PITCH control R224 clockwise to increase the pitch or counterclockwise to decrease the pitch.

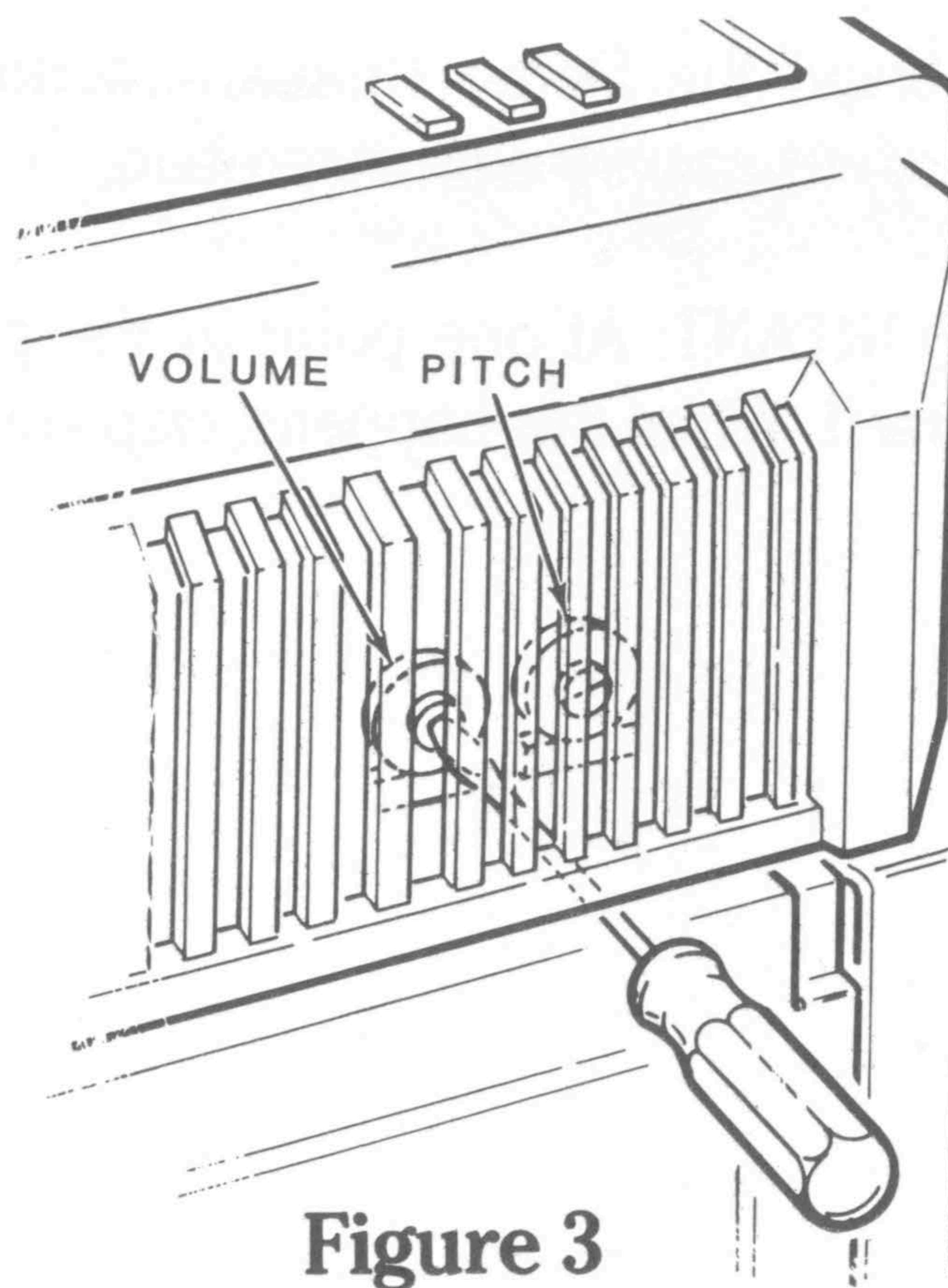


Figure 3

IN CASE OF DIFFICULTY

The following chart lists some malfunctions that you may experience during the operation of your Robot. Find the condition that best describes the problem you are experiencing. Then check the items listed under "Possible Causes."

CONDITION	POSSIBLE CAUSES
Robot completely inoperable, green LED does not light.	<ol style="list-style-type: none">1. Power switch on rear of head is in Off position.2. Batteries discharged. Charge batteries for 12 to 14 hours.3. Blown fuse. Pull front body panel straight off and check fuse (located just above batteries).

CONDITION	POSSIBLE CAUSES
Robot inoperable, green LED blinks only every five seconds.	<ol style="list-style-type: none"> <li data-bbox="4507 2693 7189 3029">1. Sleep-Norm switch on rear of head is in Sleep position. <li data-bbox="4507 3063 7016 3399">2. Push RESET to get out of Alarm mode. <li data-bbox="4507 3432 7016 4037">3. Low battery voltage. Robot will normally say “low battery” when this occurs. <li data-bbox="4507 4071 7016 4407">4. Charger connected to Robot. Unplug charger during operation.
No voice, or distorted voice.	<ol style="list-style-type: none"> <li data-bbox="4507 4675 7276 5246">1. Volume control R234 or Pitch control R224 misadjusted (see “Voice Adjustments.”)

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